PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

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NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing *(day/month/year)*	22 FEB 2011
Applicant's or agent's file reference 60469-090	**IMPORTANT NOTIFICATION**

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US03/19503 ✓	20 June 2003 (20.06.2003) ✓	

Applicant

OTIS ELEVATOR COMPANY

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US	Authorized officer
Mail Stop PCT, Attn: IPEA/ US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450	Michael Mansen Telephone No. 571.272.3600
Facsimile No.	

Form PCT/IPEA/416 (July 1992)

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 60469-090	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US03/19503	International filing date *(day/month/year)* 20 June 2003 (20.06.2003)	Priority date *(day/month/year)*
International Patent Classification (IPC) or national classification and IPC IPC: **B66B 7/06**(2006.01),**11/08**(2006.01),**7/08**(2006.01),**7/10**(2006.01) USPC: 187/254,404,411,412		
Applicant OTIS ELEVATOR COMPANY		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand 04 January 2005 (04.01.2005)	Date of completion of this report 27 January 2011 (27.01.2011)
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/ US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No.	Authorized officer Michael Mansen Telephone No. 571.272.3600

Form PCT/IPEA/409 (cover sheet)(July 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/19503

I. Basis of the report

1. With regard to the **elements** of the international application:*

☒ the international application as originally filed.

☒ the description:
pages 1-6 and 11 as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____.

☒ the claims:
pages 7-10 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of _____.

☒ the drawings:
pages 1/3-3/3 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____.

☐ the sequence listing part of the description:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____.

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination(under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

☒ the description, pages NONE

☒ the claims, Nos. NONE

☒ the drawings, sheets/~~fig~~ NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*
*** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
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V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims 3, 5, 7, 12, 15 and 17	YES
	Claims 1 - 2, 4, 6, 8 - 11, 13 - 14 and 16	NO
Inventive Step (IS)	Claims NONE	YES
	Claims 1 - 2, 4, 6, 8 - 11, 13 - 14 and 16	NO
Industrial Applicability (IA)	Claims 1-17	YES
	Claims NONE	NO

2. CITATIONS AND EXPLANATIONS
Please See Continuation Sheet

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

V. 2. Citations and Explanations:

Claims 1 - 2, 4, 6, 8 - 11, 13 - 14 and 16 lack novelty under PCT Article 33(2) as being anticipated by Nakagaki et al. U.S. Publication No. 2002/0070080.

Re: **Claim 1**, Nakagaki et al disclose an elevator comprising:

- an elevator car, referred to as cage (20, Fig. 1 - 3), movable along car guide rails (22, 23);
- a counterweight (30) movable along counterweight guide rails (31, 32);
- a bedplate, referred to as connecting beam 33 supported by the car and counterweight guide rails (22, 31, 32); and
- a machine, referred to as driving unit (40) supported by the bedplate (33) and driving a tension member, referred to as hoist cable (50, 60) interconnecting the counterweight (30) and the car (20), opposed ends of the tension member (50, 60) being connected at dead end hitches, referred to as anchoring ends (53, 57, 63, 67), the bedplate (33) having a vertically lowermost surface and the dead end hitches (53, 63) end extending above the vertical lowermost surface.

Re: **Claim 2**, Nakagaki et al disclose the dead end hitches (53, 63) are mounted on the bedplate (33).

Re: **Claim 4**, Nakagaki et al disclose the bedplate (33, Fig. 2) is formed by a pair of C-shaped beams, creating an I-beam, having an internal space and dead end hitches, referred to as anchoring ends (53, 63), positioned within the internal space.

Re: **Claim 6**, Nakagaki et al disclose a plurality of tension members, referred to as hoist cables (50, 60), and two sets of a corresponding plurality of dead end hitches, referred to as anchoring ends (53, 57, 63, 67), the dead end hitches (53, 57, 63, 67) of each of the two sets being aligned in an array that is generally parallel to a rotational axis, referred to as drive shaft (42, 43), of a machine, referred to as hoist (41).

Re: **Claim 8**, Nakagaki et al disclose the machine (41) comprises a traction sheave (44, 45) having a plurality of sheave surfaces, shown as the surfaces of traction sheave (44, 45), for engaging and driving the plurality of tension members (50, 60), and the dead end hitches (53, 57, 63, 67) disposed within an axial distance defined by ends of the traction sheave (44, 45).

Re: **Claim 9**, Nakagaki et al. discloses each of the sheave surfaces are aligned with a respective one of the dead end hitches (53, 57, 63, 67) in each of the sets of dead end hitches (53, 57, 63, 67) such that a line drawn through one of the sheave surfaces and its two associated dead end hitches (53, 57, 63, 670 is perpendicular to the rotational axis (42, 43).

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Re: **Claim 10**, Nakagaki et al disclose the machine comprises a traction sheave (44, 45) having a plurality of sheave surfaces for engaging and driving a plurality tension members (50, 60), wherein each of the sheave surfaces are aligned with a respective pair of the dead end hitches (53, 57, 63, 67) such that line drawn through one of the sheave surfaces and its two associated dead end hitches (53, 57, 63, 67) are perpendicular to a rotational axis (42, 43) of the traction sheave (44, 45).

Re: **Claim 11**, Nakagaki et al disclose an elevator comprising:

- an elevator car (20) movable along car guide rails (22, 23);
- a counterweight (30) movable along counterweight guide rails (31, 32);
- a bedplate (33) supported by the car and counterweight guide rails (22, 31, 32); and
- a machine (40) supported by the bedplate (33) and driving a plurality of tension members (50, 60) interconnecting a counterweight (30) to a car (20), opposed ends of the tension members (50, 60) being connected at dead end hitches (53, 57, 63, 67), there being two sets of aligned dead hitches (53, 57, 63, 67), each set of dead hitches (53, 57, 63, 67) in an array that is generally parallel to a rotational axis (42, 43) of a machine (41).

Re: **Claim 13**, Nakagaki et al disclose the machine comprises a traction sheave (44, 45) having a plurality sheave surfaces for engaging and driving the tension members (50, 60), and the dead end hitches (53, 57, 63, 67) are disposed within an axial distance defined by the ends of the traction sheave (44, 45).

Re: **Claim 14**, Nakagaki et al disclose wherein each of the sheave surfaces are aligned with a respective one of the dead end hitch (53, 57, 63, 67) in each of the sets of dead end hitches (53, 57, 63, 67) such that a line drawn through one of the sheave surfaces and its two associated dead end hitches (53, 57, 63, 67) is perpendicular to the rotational axis (42, 43).

Re: **Claim 16**, Nakagaki et al disclose an elevator comprising:

- an elevator car (20) movable along car guide rails (22, 23);
- a counterweight (30) movable along counterweight guide rails (31, 32);
- a bedplate (33) supported by the car and counterweight guide rails (22, 31, 32); and
- a machine (40) supported by the bedplate (33) comprising a traction sheave (44, 45) for engaging and driving a plurality of tension members (50, 60) interconnecting the counterweight (30) to the car (20), opposed ends of the tension members (50, 60) being connected via dead end hitches (53, 57, 63, 67) to the bedplate (33), the traction sheave (44, 45) having a plurality of sheave surfaces corresponding to the plurality of tension members (50, 60), wherein each of the sheave surfaces are axially aligned with a respective pair of the dead hitches (53, 57, 63, 67) such that line drawn through one of the sheave surfaces and its two associated dead end hitches (53, 57, 63, 67) are perpendicular rotational axis (42, 43) of the traction sheave (44, 45).

Claim 3 lacks an inventive step under PCT Article 33(3) as being obvious over Nakagaki et al. U.S. Publication No. 2002/0070080 in view of Ando U.S. Patent No. 6,435,316.

Re: **Claim 3**, Nakagaki et al disclose the bedplate (33) is formed by at least one beam and the dead end hitches (53, 63) are supported by a vertical portion of the beam (33); however,
Nakagaki et al are silent concerning the dead end hitches are supported by a vertical uppermost portion of the beam.

Ando teaches a bedplate, referred to as rope end fixing member (37, Fig. 3), is formed by at least one beam, and the dead end hitches, referred to as fastening member (19), are supported by a vertical uppermost portion of the beam (37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to support the dead end hitches disclosed by Nakagaki et al by a vertical uppermost portion of the beam as taught by Ando to facilitate the connection between the bedplate and the dead end hitches.

Claims 5, 7, 12, 15 and 17 lack an inventive step under PCT Article 33(3) as being obvious over Nakagaki et al U.S. Publication No. 2002/0070080 in view of Orrman et al U.S. Publication No. 2002/0017434.

Re: **Claims 5, 15, and 17**, Nakagaki et al are silent concerning the bedplate is supported by both of the car and counterweight guide rails.

Orrman et al teach a bedplate (17) is supported by both of the car and counterweight guide rails (1, 3 and 22).

It would have been obvious to one of ordinary skill in the art at the time of the invention to support the bedplate disclosed by Nakagaki et al by both of the car and counterweight guide rails to facilitate the support of the bedplate.

Re: **Claims 7 and 12**, Nakagaki et al are silent concerning each of the sets of dead end hitches are disposed on opposed lateral sides of the rotational axis of the machine.

Orrman et al teach dead end hitches (10, 11) disposed on opposed lateral sides of the rotational axis of the machine.

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Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

It would have been obvious to one of ordinary skill in the art at the time of the invention to dispose each of the sets of dead end hitches disclosed by Nakagaki et al on opposed lateral sides of the rotational axis of the machine as taught by Orrman et al to facilitate the support of each of the sets of dead end hitches.